CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 72-77

WASTE DISCHARGE REQUIREMENTS
FOR
THE DOW CHEMICAL COMPANY, PITTSBURG

The California Regional Water Quality Control Board, San Francisco Bay Region finds:

1. The Dow Chemical Company discharges the following waste:

   a. Waste "A" is 28.5 mgd of cooling water mixed with process wastewater from manufacture of inorganic and organic chemicals, and includes domestic wastes from a work force of 400 and boiler water blowdown. The waste is discharged from a settling pond into New York Slough at a point about 100 feet offshore from the discharger's settling pond at a depth of about 25 feet.

   b. Waste "B" is industrial waste only from manufacturing fungicides. It is discharged into and confined in two evaporation ponds (L-1), located about 400 feet east of the discharger's developed plant site and about 150 feet north of the Santa Fe Railway tracks.

   c. Waste "C" is industrial waste only from manufacturing synthetic latexes. It is discharged into and confined in a dewatering bed (L-2), located within the discharger's plant block number 540.

   d. Waste "D" is industrial waste only consisting of trash, paper waste, rubble, and mud. It is deposited in and confined in a land disposal site (L-3), located about 100 feet east of the evaporation ponds for waste "B".

   e. Waste "E" is industrial waste only from clarifying brine. Waste "E" is confined to a land disposal site (L-4), which is located west of the discharger's plant near his Gate Number 102.

   f. Waste "F" is industrial waste only from water treatment. It is deposited in a land disposal site (L-5) located immediately east of the discharger's plant "J" Street, near his Gate Number 701.

g. Waste "G" is industrial waste only from water treatment, and is the clarified overflow from waste "F". Waste "G" is discharged, at a design flow rate of 0.6 mgd, into Kirker Creek above its surface and about 750 feet from its mouth.

h. Waste "H" is runoff from the closed Pioneer Rubber Company plant site. The area is now used for warehousing hardware and canned food. This wastewater is discharged into New York Slough above its surface and about 700 feet west of waste "A" discharge point.

i. Waste "I" is runoff from the site of a closed storage terminal for petroleum products. This wastewater enters New York Slough above its surface at the north end of the discharger's plant "J" Street via surface drains.

j. Waste "J" is runoff from undeveloped land east of the discharger's plant. This site is used to store masonry materials, clean metal scrap, and graphite. This wastewater is discharged into Kirker Creek above its surface at a point about 2200 feet from its mouth via surface drains.

k. Waste "K" is industrial waste only consisting of accidentally spilled process matter. Spills are discharged to and confined in a retention pond located in plant Block Number 500 adjacent to New York Slough.

2. The Board adopted an Interim Water Quality Control Plan for the San Francisco Bay Basin in June 1971.

3. The beneficial uses of the New York Slough and contiguous water bodies as set forth in the Interim Basin Plan include:

a. Fish migration and spawning

b. Recreation

c. Waterfowl and migratory birds habitat and resting

d. Navigation

e. Seasonal source of domestic water supply at Mallard Slough

f. Industrial Water Supply

g. Esthetic enjoyment

4. The requirements herein after prescribed are necessary to implement the Basin Plan for San Francisco Bay, protect the beneficial uses of New York Slough and contiguous water bodies, and prevent nuisance.

5. The Board has notified the discharger and interested agencies and persons of its intent to prescribe new waste discharge requirements for the Dow Chemical Company.

6. The Board in a public meeting heard and considered comments pertaining to the discharge and the requirements prescribed herein.

IT IS HEREBY ORDERED, The Dow Chemical Company, Pittsburg shall comply with the following:

A. Discharge Specifications - Waste "A"

1. Neither the treatment nor the discharge shall create a nuisance as defined in Section 13050(m) of the California Water Code.

2. Representative samples of the discharge shall not contain constituents in excess of the following limits:

Constituent	Units	Mean	Maximum
Settleable Matter 1/	ml/l/hr	0.1	0.5
Toxicity Emission Rate	(Toxicity Units) (mgd)	16.8	28.5
Toxicity Concentration	Toxicity Units	0.59	1.00
5-day 20°C BOD	lbs/day mg/l	5,900 -	11,800 45

1/ Values in addition to concentrations present in the water supply.

3. The discharge shall not have a pH of less than 7.0 or greater than 8.5, or 6.5 to 8.5 when the natural ambient value is as low as 6.5.

4. The discharge shall not exceed the ambient receiving water temperature by more than 20°F nor shall it exceed 86°F.

Discharge Specifications - Waste "B"

1. Neither the treatment nor the discharge shall create a nuisance as defined in Section 13050(m) of the California Water Code.

2. Waste "B" and all internal surface drainage of its disposal site shall be confined within the land disposal site at all times.

3. The land disposal site shall have facilities adequate to divert surface runoff from adjacent areas, to protect the boundaries of the site from erosion, to prevent conditions that would cause drainage or seepage from the site, and to protect the site from flooding by tidal or storm water. Adequate protection is defined as protection from at least a 100-year storm and from the highest tidal stage that may occur.

4. No component of waste "B" shall be on or below the ground surface outside of the disposal site.

5. The disposal of waste "B" and the operation of its land disposal site shall be in conformance with all provisions of the California Administrative Code, Title 23, Chapter 3, Subchapter 15 pertaining to Class I waste disposal sites.

C. Discharge Specifications - Waste "C", "D", "E", and "F"

1. Wastes "C", "D", "E", and "F" shall be confined to their respective land disposal sites at all times and shall not be placed in any position where they can be carried from the disposal sites into waters of the State.

2. These disposal sites shall have facilities adequate to divert surface runoff from adjacent areas, to protect the boundaries of the site from erosion, to prevent conditions that would cause drainage or seepage from the site, and to protect the site from flooding by tidal or storm water. Adequate protection is defined as protection from at least a 100-year storm and from the highest tidal stage that may occur.

3. Disposal site for waste "D" shall be dewatered before the waste is placed in it.

4. Internal drainage of the disposal sites shall be confined within them.

5. Discharging any material acceptable only at Class I disposal sites into these disposal sites is prohibited.

6. The disposal of these wastes and the operation of their land disposal sites shall be in conformance with all provisions of the California Administrative Code, Title 23, Chapter 3, Subchapter 15 pertaining to Class II waste disposal sites.

C. Discharge Specifications - Wastes "G", "H", "I", and "J"

1. Neither the treatment nor the discharge shall create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharge shall not contain constituents in excess of the following limits:

Constitutents	Units	Maximum
Settleable Matter	ml/l/hr	0.5
Oil and Grease	mg/l	15
Toxicity Concentration	Toxicity	0.87

E. Discharge Specifications - Receiving Water

1. The discharge of wastes shall not cause:

a. Floating, suspended, or deposited macroscopic particulate matter or foam in waters of the State at any place:

b. Bottom deposits or aquatic growths at any place;

c. Alteration of turbidity or apparent color beyond present natural background levels in waters of the State at any place;

d. Visible, floating, suspended or deposited oil or other products of petroleum origin in waters of the State at any place;

e. Tidal waters of the State to exceed the following limits of quality at any place within one foot of the water surface:

Dissolved Oxygen	Minimum - 5.0 mg/l Annual median - 80% saturation When natural factors cause lesser concentrations, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
pH	A variation from natural ambient pH by more than 0.1 pH units.

f. Tidal waters of the State to exceed the following limits of quality:

Toxic or Other Deleterious Substances	None shall be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

g. Any zone exceeding 25 percent of the cross-sectional area of New York Slough in which the water temperature is more than one degree Fahrenheit above the ambient receiving water temperature, as a result of either this discharge alone or in combination with others.

h. A surface temperature rise exceeding the ambient temperature of the receiving waters by more than four degrees Fahrenheit at any time or place.

F. Discharge Prohibition

1. The discharge of domestic sewage bearing wastewater into New York Slough shall be prohibited after July 1, 1974.

G. Provisions

1. Mean values shall be based on the running average of samples representative of the discharge over any 30-day period.

2. Dow Chemical Company shall immediately take all possible measures to achieve compliance with the discharge specifications in this order and shall submit to the California Regional Water Quality Control Board, San Francisco Bay Region, by December 1, 1972, a report delineating the immediate measures that have been or will be taken.

3. Dow Chemical Company shall comply with the following time schedule to assure compliance with the requirements of this order:

Task	Completion Date	Report of Compliance Date
Develop a work plan to meet discharge requirements	December 1, 1972	December 15, 1972
Develop a conceptual plan and detailed time schedule for completion of final plans, award of construction contracts, completion of construction, and compliance with requirements	October 1, 1973	October 15, 1973
Comply with thermal requirements	January 31, 1976	February 15, 1976

4. The requirements prescribed by this order amend the requirements prescribed by Resolution 71-40 adopted by the Board on June 24, 1971, which shall remain in full force and effect until the date Dow Chemical Company is to be in full compliance with these requirements pursuant to a complete time schedule to be adopted by this Board, except for the thermal requirements.

5. This order includes items 1, 6, 7, and 8 of the attached "Reporting Requirements" dated September 11, 1972.

6. This order includes items numbered 1 through 6 of the attached "Notifications" dated January 6, 1970.

I, Fred Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the Regional Board, on September 26, 1972.

Executive Officer

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DEFINITION OF TOXICITY TERMINOLOGY

a. Toxicity Concentration (Tc)

Expressed in Tocicity Units (tu)

$$Tc\ (tu) = \frac{100}{96\text{-hr. } TLm\%}$$

b. Median Tolerance Limit (TLm%)

The TLm shall be determined by static or continuous flow bioassay techniques using standard test species.

When it is not possible to measure the 96-hr. TLm due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$Tc\ (tu) = \frac{\log (100 - S)}{1.7}$$

S = percentage survival in 100% waste

c. Toxicity Emission Rate (TER)

Is the product of the effluent Toxicity Concentration (Tc) and the waste flow rate expressed as mgd.

TER (tu x mgd) = Tc (tu) x Waste Flow Rate (mgd)